

AMENDMENTS TO THE CLAIMS

1.-32. (Canceled)

33. (New) A method of implementing per-instance attributes, the method comprising computer-implemented steps of:

instantiating a first instance of a class and a second instance of said class, wherein

said class includes a single-valued property attribute;

wherein both said first instance of said class and said second instance of said class

include said single-valued property attribute;

assigning to said single-valued property attribute of said first instance a first value

that associates a first set of one or more attributes with said first instance;

assigning to said single-valued property attribute of said second instance a second

value that associates a second set of one or more attributes with said second

instance;

wherein said first set of one or more attributes is different than said second set of one

or more attributes;

wherein said first set of one or more attributes and said second set of one or more

attributes are not included in said class or any superclass of said class;

wherein assigning said first value to said single-valued property attribute of said first

instance does not cause any of said first set of one or more attributes to

become attributes of said class or of any instance of said class other than said

first instance;

wherein assigning said second value to said single-valued property attribute of said

second instance does not cause any of said second set of one or more attributes to become attributes of said class or of any instance of said class other than said second instance;

wherein said steps of said method are performed by one or more computing devices.

34. (New) The method of Claim 33, wherein:

a first property class contains said first set of one or more attributes, wherein said first value references an instance of said first property class; and
a second property class contains said second set of one or more attributes, wherein said second value references an instance of said second property class; and
said first property class is different than said second property class.

35. (New) The method of Claim 33, wherein:

said first value references a first instance of a property bundle class, wherein one or more instances of a first set of one or more property classes include pointers to said first instance of said property bundle class, wherein said first set of one or more property classes include said first set of one or more attributes;
said second value references a second instance of said property bundle class, wherein one or more instances of a second set of one or more property classes include pointers to said second instance of said property bundle class, wherein said second set of one or more property classes include said second set of one or more attributes; and
said first set of one or more property classes are different than said second set of one or more property classes.

36. (New) The method of Claim 33, further comprising the steps of:
assigning a first set of one or more keys to said first set of one or more attributes,
wherein said first set of one or more keys respectively identifies said first set
of one or more attributes; and
assigning a second set of one or more keys to said second set of one or more
attributes, wherein said second set of one or more keys respectively identifies
said second set of one or more attributes.

37. (New) The method Claim 36, wherein:
assigning said first set of one or more keys comprises receiving, from a user, first data
that defines said first set of one or more keys; and
assigning said second set of one or more keys comprises receiving, from said user,
second data that defines said second set of one or more keys.

38. (New) The method Claim 36, wherein:
assigning said first set of one or more keys comprises invoking a method for each of
said first set of one or more attributes.

39. (New) The method of Claim 33, wherein said class represents a file type in an
extensible file system, and wherein:
said first instance of said class represents a first file of said file type, wherein said
first file is associated, through the first value, with said first set of one or more
attributes that do not belong to said file type; and
said second instance of said class represents a second file of said file type, wherein

said second file is associated, through the second value, with said second set of one or more attributes that do not belong to said file type.

40. (New) A method of implementing per-instance attributes, the method comprising computer-implemented steps of:
 instantiating an instance of a class, wherein said class defines a first set of one or more attributes;
 including, in the structure of said instance of said class, a table for storing data associated with a second set of one or more attributes, wherein, for each particular attribute of said second set of one or more attributes, said table includes a particular entry that comprises:
 a first field for storing an identifier of said particular attribute; and
 a second field for storing one or more data values of said particular attribute;
 wherein said first set of one or more attributes defined in said class do not include said second set of one or more attributes;
 wherein said second set of one or more attributes do not belong to said class or any superclass of said class;
 wherein said steps of said method are performed by one or more computing devices.
41. (New) The method of Claim 40, wherein said identifier is an attribute name of said particular attribute.
42. (New) The method of Claim 40, wherein identifiers stored in said first field are designated as keys for locating entries in said table, and wherein said method further

comprises steps of:

receiving a data value of a specific attribute of said second set of one or more attributes and a specific identifier that identifies said specific attribute; using said specific identifier to locate in said table a specific entry that stores said specific attribute; and

without performing datatype checking on said data value, storing said data value in said specific entry.

43. (New) The method of Claim 40, wherein said table is a hash table, and wherein said method further comprises steps of:

receiving input that identifies a specific attribute of said second set of one or more attributes;

hashing said input to generate a hash key; and

using said hash key to locate in said hash table a specific entry that stores said specific attribute.

44. (New) The method of Claim 40, further comprising a step of adding a specific attribute to said second set of one or more attributes in response to an invocation of a method defined in said class.

45. (New) The method of Claim 44, wherein:

said invocation of said method includes a specific identifier by which said specific attribute will be identified; and

adding said specific attribute includes storing said specific identifier in said first field of a specific entry in said table.

46. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 33.

47. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 34.

48. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 35.

49. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 36.

50. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 37.

51. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 38.

52. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 39.

53. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 40.
54. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 41.
55. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 42.
56. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 43.
57. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 44.
58. (New) One or more storage media storing instructions which, when executed by one or more computing devices, cause performance of the method recited in Claim 45.